Sustaining U.S. Leadership in the Asia-Pacific Region

Why a Strategy of Direct Defense Against Antiaccess and Area Denial Threats Is Desirable and Feasible

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Amid the seemingly unrelenting welter of security-related crises U.S. and allied leaders have faced in recent years, it has not gone unnoticed that trends in the capabilities of conventional military forces have, from the perspective of the United States, been moving in an unfavorable direction over the past decade or more. This realization has not been the result of any failed military operations at the hands of a regional state adversary.[1] Indeed, in 2011, U.S. and allied forces were able to decisively tip the balance against Muammar Gaddafi's Libyan forces without really breaking a sweat. Rather, observers have been impressed by other indicators of growing threats to U.S. military dominance. The steady, impressive growth of China's military capabilities, coupled with its development of strategies for "counter-intervention," has been the leading source of concern in this regard. But other states, including Russia, Iran, and North Korea and even some nonstate actors, such as Hezbollah, have also demonstrated growing mastery of military capabilities that have the potential to raise the costs and risks of military intervention dramatically on their territories or in their regions.

A debate over the appropriate set of responses—strategic, operational, and technical—has begun. The debate encompasses a range of views, from those who call for increased levels of U.S. engagement to advocates of disengagement from the security affairs of key regions.[2] The outcome of that debate and the extent to which the United States and its leading security partners will be able to develop capabilities and concepts adequate to the challenge will be critical factors shaping future dynamics in the international system. This perspective is intended as a contribution to this debate. It does not offer definitive answers to the question of precisely what capabilities and concepts the U.S. Department of Defense (DoD) should pursue. Answering such questions in detail will likely be the central preoccupation of the U.S. defense establishment for the next decade or so. But enough analysis has been done to allow us to point with confidence both to a potentially effective and feasible

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overall military approach to the challenge—an approach called *direct defense*—and to the general sorts of operational concepts and supporting capabilities that will be called for to enable that approach.

Direct defense is predicated on the belief that the most credible way to assure partners and deter aggression is to confront potential aggressors with the prospect of failure should they seek to advance their objectives through force of arms. Direct defense requires that the United States and its allies and partners together field military capabilities sufficient to engage and damage or destroy attacking forces (combat aircraft, ships, missiles, land forces) and the assets (bases, command-and-control facilities, air defenses) that directly support them. Such an approach can enable the United States to sustain its role as the security partner of choice for many of the world's most important states—a role that has served the United States well since its entry into World War II.

This perspective addresses four aspects of the issue:

- the stakes associated with America's ability to sustain an overall national security strategy of international engagement and leadership
- military trends that could affect the viability of that strategy, with a focus on the emergence of adversaries that are mastering capabilities loosely grouped under the term *antiaccess and area denial* (A2/AD)
- contending strategies that have been proposed in response to these trends
- an integrated set of military capabilities to pursue in support of a continued strategy of engagement and leadership.

The Strategic Context and Stakes

One of the fundamental premises of U.S. national security strategy since the end of the Cold War and, indeed, since World War II has been that, in an increasingly interdependent world, the government of the United States cannot hope to achieve its objectives without the ability to influence actors and shape events beyond its borders. Whether the goal is to protect U.S. citizens against terrorist attacks, contain the spread of weapons of mass destruction, ensure fairness in international commerce and access to the global commons, or protect the environment, meaningful and lasting progress will require cooperation among an increasingly broad set of actors—nation states, official and unofficial multinational organizations, and private enterprises. In such an environment, any successful strategy will, perforce, focus on building and sustaining coalitions that can address common challenges.

For the past 70 years, the United States has uniquely possessed the ability to deploy large-scale military forces over intercontinental distances and conduct sustained, complex operations across a wide range of mission sets. This capability for power projection to deter and defeat aggression has been fundamental to U.S. security and to the security and well-being of our allies and partners, allowing the United States to offset major imbalances of power in Eurasia and elsewhere. Along with America's economic prowess, vigorous diplomacy, and the attractiveness of its society and model of governance, its power-projection capabilities have allowed the United States to play the leading role among states with democratically elected governments. America's status as a leader and security partner of choice for so many other states has conferred benefits on issues across the nation's policy agenda. Without the ability to deter and defeat

large-scale aggression in regions of importance to U.S. security, U.S. power and influence would wane. Maintaining the ability to influence affairs in the dynamic Asia-Pacific region is particularly important, which is why the Obama administration launched its "rebalance" initiative in 2012.

Since the end of the Cold War, U.S. forces have enjoyed a rare, if not unprecedented, degree of superiority over the forces of adversary states. As they demonstrated against the forces of Iraq (twice), Serbia, and other states against which they have fought when sent into conflict, U.S. forces have been able to quickly seize the initiative, dominate the battle space in all domains—air, sea, land, space, and cyberspace—and achieve campaign objectives with dispatch. This has helped U.S. policymakers deter aggression and underwrite stability in key regions.

Unfavorable Trends

As important as it is to sustain effective U.S. power-projection capabilities, the ability of U.S. forces to enable effective intervention and deterrence in the future is uncertain. There are a number of reasons for this. Foremost is the diffusion of knowledge, technologies, weapon systems, and operating concepts associated with modern military operations. Adversaries of the United States have closely observed the ways in which U.S. forces have integrated new technologies and systems for reconnaissance, data transmission and processing, precision guidance, robotics, and so forth into operational concepts that allow the rapid and precise application of firepower. These adversaries have sought to replicate these capabilities in their own forces and, conveniently for them, as they have done so, the material wherewithal to support such capabilities has become increasingly widespread and affordable.

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As a result, potential adversaries are pursuing strategies designed to deter or prevent the United States from freely deploying its forces into their regions and to suppress the operations of those forces that do deploy forward. Key elements of these A2/AD strategies are accurate ballistic and cruise missiles; dense, integrated surface-to-air defenses; large numbers of modern fourth-generation fighter aircraft and capable air-to-air missiles; near-real-time surveillance and reconnaissance systems; hardened, redundant command-and-control networks; electronic warfare (jamming) systems; antisatellite weapons; and cyber weapons. As noted above, today and for the foreseeable future, China is, by far, the leading exponent of sophisticated A2/AD capabilities, while Russia has also been able to field substantial numbers of these systems.[3]

States that cannot afford large numbers of these sophisticated systems, such as North Korea and Iran, are fielding them selectively and in smaller numbers. They are also deploying or developing nuclear weapons and delivery systems. When deployed in deeply buried facilities or on mobile launchers, even a small nuclear arsenal can be difficult to neutralize, posing serious risks of escalation. North Korea and Iran also espouse military doctrines that incorporate irregular forces and unconventional operations as means of countering U.S. conventional superiority. Like terrorist and insurgent groups, they perceive that U.S. forces face difficulties in bringing their superior firepower to bear against dispersed,

irregular forces operating among civilian populations. And whether the opponent wields highly sophisticated weapons, such as those China is fielding, or unconventional forces, one should not expect that the U.S. homeland will be free from attack in a future conflict.

The other factor threatening the future of U.S. power-projection capabilities is the growth of constraints on U.S. defense spending due to the budget deficit and other demands on the federal budget. Defense appropriations in fiscal years 2012 and 2013 were, respectively, 6 percent and 13 percent less than what DoD had been planning for.[4] These cuts have been imposed against the Pentagon's "base budget," meaning that they have come on top of reductions in spending for combat operations in Iraq and Afghanistan. Moreover, these cuts have been absorbed by a force that is, in some ways, less well trained and equipped than it was in 2001. Neither the Air Force nor the Marine Corps, for example, has been able to invest heavily in new combat aircraft, resulting in a force that is the oldest in history. In the case of the Air Force, the average age of its combat aircraft now exceeds 26 years.[5]

Absent a major change in the fiscal outlook, limits on funding will significantly constrain the options available to U.S. force planners and decisionmakers as they strive to develop the new approaches to power projection that will be called for in the face of these rapidly evolving threats.

Assessing A2/AD Threats

Force planners use scenarios that represent their expectations about important features of the future operating environment to test the adequacy of planned forces. For evaluating power-projection capabilities, force-planning scenarios should depict challenges that have all the following characteristics:

- They are set in a region or involve an issue in which the United States has sufficient interests that its leaders would plausibly consider defending with large-scale military forces if threatened.
- The antagonist is pursuing or could plausibly pursue interests antithetical to those of the United States and its allies.
- The antagonist has or likely will have the military wherewithal to credibly threaten U.S. and allied interests (see Ochmanek and Hosmer, 1997).

Scenarios depicting aggression by the potential adversaries mentioned above—China, Russia, North Korea, and Iran—satisfy all three criteria and are, therefore, appropriate vehicles for evaluating U.S. military capabilities.[6] Note that an estimate of the likelihood of a conflict is not a criterion in selecting scenarios for force planning. Scenario development is not and should not be an exercise in prediction. Throughout the Cold War, most observers believed that a Soviet-led Warsaw Pact invasion of Western Europe was unlikely, but this in no way invalidated the need to prepare forces (conventional and nuclear) to counter such an invasion; indeed, by doing so, NATO hoped to ensure that the probability of invasion remained low because a rational Soviet leader would be deterred from attempting it.

China presents the most stressing set of potential operational challenges for the future and will therefore be the "pacing threat" motivating the modernization of U.S. forces and capabilities for power projection. But the other adversaries, all of which are spending significantly less on their military forces than China, can pose similar operational challenges to at least selected components of a U.S. military campaign in their regions.[7] How might a large-scale

conflict with a capable adversary in the 2020 time frame differ from the types of conventional conflicts that U.S. forces have engaged in since 1991? And what sorts of capabilities will be called for if U.S. forces are to prevail in such a conflict?

Long-Range, Accurate Missiles

The most obvious source of concern for U.S. planners in such a scenario is the large number of accurate ballistic and cruise missiles that the adversary might field.[8] Accuracy is a key factor. The Scud missiles that Iraqi forces fired at U.S. and coalition forces in the 1991 Gulf War featured circular errors probable on the order of 1,000 meters. This meant that the missiles could be used to harass the operations of forward-based forces at fixed installations, such as air bases, but that they were unlikely to do significant damage.[9] Today, just as U.S. forces use modern, lightweight inertial measuring units; positioning data from satellites, such as the Global Positioning System; and sometimes, terminal homing sensors to guide weapons to their targets, so do some adversaries (OSD, 2014, p. 40). These technologies can allow an adversary to achieve much higher accuracies (on the order of 20 to 30 m or less for some models), meaning that missiles with ranges of 1,000 km or more can attack not only specific installations but particular facilities on them with high probabilities of damage (Shlapak et al., 2009, pp. 32–35). As a result, forward-based forces, such as combat and support aircraft, can now be vulnerable to being damaged on the ground before they get to the fight. The supplies and facilities needed to support combat operations, such as fuel, munitions, maintenance hangars, runways, crew quarters, and communications sites, may also be vulnerable. China has also reportedly developed ballistic and cruise missiles that can detect and attack large ships at sea, raising the risks to aircraft carriers, large surface combatants, and other naval components of U.S. power-projection forces (OSD, 2014, pp. 7, 31, 36).

U.S. and allied forces are investing in active defense systems, such as Patriot, the Terminal High-Altitude Area Defense system, and sea-based SM-3 missiles, to shoot down ballistic and cruise missiles. However, the defensive systems are expensive, take time to deploy, and have not thus far consistently achieved high probabilities of kill against the most capable threat systems. As a consequence, these systems can be overwhelmed by large salvo attacks and taken out of the fight.

Integrated Air Defense Systems

Radar-guided surface-to-air missiles (SAMs) and their associated surveillance and control networks have been a feature of modern military operations since the 1960s. Since the Gulf War, U.S. forces have demonstrated the ability to suppress, avoid, and degrade these defenses through a combination of dynamic targeting, specialized radar-homing weapons, electronic jamming, stealth aircraft, and other measures. These techniques have been instrumental in allowing U.S. and coalition air forces to operate within the enemy's airspace largely unimpeded.

Beginning in the late 1990s, first Russia, then China began investing in a new generation of SAMs that feature powerful tracking and guidance radars equipped with electronic countermeasures and high-performance missiles capable of engaging fighter aircraft at ranges of 125 miles or more. The radars and missile launchers are mounted on mobile vehicles, making them difficult to locate and target.[10] When such systems are fielded in sufficiently dense arrays and supported by survivable command-and-control facilities,

suppressing these modern integrated air defense systems can be difficult, dangerous, and time consuming.

Fighter Aircraft

Russia and China complement their surface-based air defenses with substantial numbers of highly capable fighter aircraft, such as the Russian-made Su-27. Roughly comparable in range, payload, and aerodynamic capabilities to the formidable U.S. F-15C fighter, these aircraft can operate over areas not well covered by SAMs, threatening both combat aircraft (fighters and bombers) and support assets, such as aerial refueling and surveillance aircraft. Equipped with modern air-to-air missiles and backed by robust networks for command and control, Russian and Chinese fighters today present a more formidable challenge to air superiority than any adversary the United States has faced since World War II.

To date, neither Russia nor China has fielded an operational fifth-generation fighter similar to the U.S. F-22 or F-35.[11] In a direct engagement, assuming aircrews with comparable skills, fifth-generation fighters would be expected to achieve highly favorable exchange ratios against their fourth-generation foes. But only a small portion of the U.S. fighter force to date has been equipped with fifth-generation aircraft, and Russia and China are both building their own advanced fighters.[12] Moreover, Russian and Chinese commanders would strive to limit the flow of U.S. combat aircraft into the theater and into the fight by launching heavy attacks on U.S. forward operating bases. It is therefore possible that, in a conflict involving either of these states, U.S. and allied air forces would have to fight outnumbered, at least in the conflict's early phases (Shlapak et al., 2009, p. 67).

These developments will make it much more costly for the United States and its allies to gain the air superiority to which they have grown accustomed. In a future conflict, air superiority could be contested for days or weeks and achieved only after incurring potentially significant losses (Shlapak et al., 2009, p. 118).

The Struggle for Information Superiority

Adversaries that have studied U.S. military campaigns since Operation Desert Storm understand the critical role that information superiority plays in modern military operations. In that conflict and others since then against conventional foes, U.S. forces have been able to develop a "common operating picture" (COP) of the battlefield, providing commanders and frontline units with current information about the location and status of both enemy and friendly units. The picture is built by fusing information from myriad sources, including airborne and space-based sensors, human intelligence, and reports from friendly units. The picture is not perfectly accurate or entirely comprehensive, of course, but U.S. commanders today have far better situational awareness of a large and complex battle space than commanders have had at any time in history. Importantly, they have also been able to degrade the enemy's COP.

Potential adversaries are striving to develop similar capabilities, fielding sensor systems on satellites, unmanned aerial vehicles, and other airborne sensor platforms; building command centers in which to fuse the information from these sensors; and using multiple communication systems to connect these nodes with units in the field. They are also working to degrade the quality, timeliness, and reliability of the COP available to U.S. forces. China, for instance, has fielded large numbers of electronic jamming

systems to degrade U.S. theater communications (Forbes, 2013). China's forces also have capabilities to interfere with the sensors on surveillance satellites and to destroy the satellites themselves (Minnick, 2014b). Numerous adversaries are using cyber operations to attempt to penetrate U.S. military information networks both to extract information and to disrupt operations. As a result, U.S. forces cannot be confident that, in a conflict with the most capable adversaries, they would have an accurate and timely view of the battlefield or that they could communicate effectively at all times in the theater.

Undersea Warfare

The People's Liberation Army (PLA) Navy is building modern submarines, including nuclear-powered vessels, and equipping them with capable weapon systems, including long-range antiship and land-attack cruise missiles. And while DoD judges that the PLA Navy's deep-water antisubmarine warfare capability "seems to lag behind its air and surface warfare capabilities," it notes that China "is working to overcome shortcomings in this and other areas" (OSD, 2014, pp. 31–32).

In short, the loss of the near monopoly that U.S. forces have enjoyed over a wide range of key capabilities can have potentially profound effects on the forces' ability to project power and defend U.S. interests, allies, and partners. In conflicts against the most capable adversary forces in the 2020 time frame and beyond, U.S. and allied forces will have to fight for advantages that they have heretofore taken almost for granted. Without very substantial investments in new capabilities and concepts for power projection, U.S. and allied decisionmakers could lose confidence in the

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U.S. ability and will to defeat aggression. Should this happen, the role of the United States as a security partner would be called into question, and its influence and ability to help sustain a stable and economically vibrant world order would erode.

Responding to the Challenge

As the magnitude of the challenge that adversaries with advanced A2/AD capabilities present has become more widely understood, a debate has arisen, and widely different approaches have been advanced for how the United States and its allies and partners should respond. At one end of the spectrum are those who believe that the United States should step back from its role as security partner of choice in Eurasia because, as new powers rise in the international system, the growing costs of underwriting these commitments will exceed the benefits that the United States derives from them. The term *offshore balancing* has been applied to this school of thought. Closer to the center of the spectrum are those who believe that the United States should retain its alliance commitments but that these can be satisfactorily supported via military strategies that would rely on varying combinations of measures in an effort to impose costs on an aggressor and/or shift the burden of

defense to regional allies and partners, while de-emphasizing U.S. capabilities to directly defeat aggression.

A third approach, which we call *direct defense*, is based on the belief that credible deterrence is predicated on the ability of the defender to confront potential adversaries with military capabilities that are able to defeat the adversaries' aggressive campaigns—that is, deny adversaries the objectives of their operations. This approach reflects the belief that threatening to impose costs on an aggressor may not be sufficient to deter him if the objectives of his aggression are highly important to him. A corollary to this belief is that the United States, together with its allies and partners in East Asia and elsewhere, has the means—technical, operational, and financial—to field the requisite military capabilities to support such a direct defense strategy, even as adversaries continue to improve their own forces. Direct defense is, implicitly, the approach normally taken by operational and force planners in DoD when confronted with conventional military challenges. In our conception, laid out below, we supplement this traditional approach in several ways.

This section briefly evaluates each of these contending approaches.

Offshore Balancing

Offshore balancing and related approaches advocating a U.S. retrenchment are strategies that spring from the belief that "imperial overstretch"—a nation-state's use of extensive national resources to maintain a leading role in the international system—saps a nation of its strength over time, resulting inevitably in its decline.[13] The underlying premise of the offshore balancing strategy is that "it will become increasingly more difficult, dangerous, and costly for the United States to maintain order in, and control over, the international political system" as other states gain power relative to the United States (Layne, 1997, p. 112; see also Logan, 2013). In response, the strategy prescribes that the United States disengage from its major security commitments and rely on "regional power balances to contain rising powers" (Layne, 2009, p. 10). Christopher Layne, who articulated the strategy in 1997, also advocates that the United States be prepared, if necessary, to intervene militarily to "prevent the rise of a Eurasian hegemon" and asserts that a force that emphasizes "nuclear deterrence, air power, and . . . overwhelming naval power" would be appropriate and sufficient to support a strategy of offshore balancing (Layne, 1997, p. 113).

Arguments advanced in favor of offshore balancing have become somewhat more nuanced over time but continue to advocate scaling back U.S. security commitments in key regions. This, obviously, rejects the central motivating premise of U.S. national security strategies since the end of World War II, which is that, if the United States does not effectively lead—and pay the costs of fielding the capabilities needed to support that leadership—the nation will place important interests at risk and ultimately pay much higher costs later. In its most recent manifestation, the national security strategy of the United States emphasizes the growth of international interdependence and the relative diffusion of power and influence to multiple actors but comes to a conclusion that is the opposite of the offshore balancers': "Many of today's challenges cannot be solved by one nation or even a group of nations." The strategy therefore emphasizes the need for "comprehensive engagement" abroad and efforts to "promote a just and sustainable international order" (White House, 2010, pp. 11–12, 47).

As a substitute for U.S. security commitments, proponents of disengagement assume that other states will "balance against a potential hegemon" (Layne, 1997, p. 113; see also Logan, 2013,

p. 15). Their preferred strategy, obviously, would place fewer demands on the armed forces of the United States but, equally obviously, would represent a huge gamble, both militarily and strategically. It is not clear that a lower U.S. profile abroad would prompt allies and partners to do more for their own defense. And if it did, there are limits on the extent to which these states (e.g., Taiwan) can compete with their more powerful neighbors (e.g., China). Hence, it is difficult to see how withdrawing U.S. forces and security commitments from Eurasia would not erode deterrence, even if regional states with the ability to do so dramatically stepped up their investments in military capabilities. More profoundly, U.S. retrenchment would tempt regional hegemons to use divide-and-conquer strategies to isolate less-powerful states in their regions, compelling them to accept one-sided security arrangements that make them beholden to the hegemon. In this world, the diminished, isolated United States that would emerge would lose the ability to influence decisions and actions in key regions, with unavoidable consequences for the security and well-being of Americans.

Deterrence "On the Cheap"

Like offshore balancing, such strategies as T. X. Hammes's "offshore control" and related approaches spring from an appreciation of recent unfavorable trends in the balance of military power in East Asia and of tightening constraints on U.S. defense spending. However, proponents of these approaches do not advocate that the United States disengage completely from its security commitments to allies in East Asia or elsewhere. Rather, they assert that the United States can credibly deter and respond to Chinese aggression without having to invest extensively in new capabilities, systems, or concepts for power projection. Some assert that beefing up the defensive capabilities of allied and partner states in East Asia will be sufficient, or nearly so. Others advocate indirect, coercive approaches to deterring China's leaders based on threats to impose costs on them or to widen the conflict.

Hammes, for example, asserts that, if Taiwan would deploy "mines, mobile antiship missiles, submarines, and air defense systems . . . [, it] could deny China the possibility of a quick victory" in a future conflict (Hammes, 2012, p. 13; see also Minnick, 2014a). David Gompert and Terrence Kelly offer a similar judgment, stating that efforts to improve the defensive capabilities of U.S. allies and partners should be a "central element" in the U.S. approach to countering advanced A2/AD challenges (Gompert and Kelly, 2013). Hammes supplements his approach by promoting the idea of "a war of economic attrition" in which U.S. forces would interdict commercial shipping going to and from China in hopes of crippling its economy (Hammes, 2012, p. 5). In the event of a conflict with China, Toshi Yoshihara and James R. Holmes, two professors at the U.S. Naval War College, call for operations to threaten Chinese military objectives in areas peripheral to the main locus of Chinese aggression. They claim that, by opening "multiple fronts," in response to aggression, U.S. forces could "spread Chinese forces thin"

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and potentially compel them to "exhaust finite stocks of . . . weapons" (Yoshihara and Holmes, 2012, p. 3).

The problem with these approaches, put bluntly, is that they are not likely to work. They can be valuable complementary approaches to a strategy aimed at denying Chinese forces their objectives, but by themselves, such indirect approaches are not likely to deter or defeat a determined China or other powerful state.

"Contracting It Out"

Gaming and analysis of hypothetical conflicts involving China and neighboring states in the 2025 time frame suggest that, in plausible scenarios, if the goal is to defeat a large Chinese military operation, there is simply no substitute for the type of and level of military support that the United States uniquely can provide. This support must be brought to bear quickly and must be sustained throughout the campaign. One detailed assessment of a potential conflict between China and Taiwan in the 2015 time frame concluded that a determined attack on Taiwan using China's force of ballistic missiles alone could "seriously degrade Taiwan's self-defense capabilities . . . [, leaving] Taiwan with a profoundly reduced ability to defend itself, left open to a range of follow-on actions intended to coerce or conquer it and its people" (Shlapak et al., 2009, p. 51).

To be sure, there is much that partners, such as Taiwan, can and should do to get more-effective defensive capabilities from their military establishments. If they did so, it would, over time, reduce the burden on U.S. forces. But the disparity between the military potential of China and that of most of its neighbors is enormous.[14] It would therefore be imprudent for U.S. planners to assume that even concerted efforts by U.S. partners and allies in the region

could substitute for U.S. security guarantees backed by a wide range of enhanced power-projection capabilities.

Imposing Costs Elsewhere

As for cost imposition as a response to aggression, such strategies suffer from the problem all coercive strategies share: They allow the enemy to retain the initiative operationally. Indirect strategies can appear superficially attractive because they offer the defender the prospect of being able to choose where to fight. Rather than posturing forces to actually defend that which one values, one can prepare forces to attack things that are easier to hold at risk in the hope that doing so will convince the adversary to eschew aggression or desist once he has begun. The success of this approach depends crucially on the assumption that the defender can actually identify and attack assets that the attacker values more than the object of his aggression. In the case of a possible Chinese invasion of Taiwan, it is far from clear what that might be. And even if such assets can be identified and the adversary convinced that they will be successfully attacked in the event of a conflict, cost-imposing approaches offer little comfort to the allies and partners on whose behalf one is intervening: Their territories lie bare to aggression should the adversary choose to attack.

Related to this is the problem of time: Indirect approaches, particularly those based on constricting economic activity, are not likely to take effect quickly enough to meaningfully impede a major power's military campaign. It must be assumed that China, for example, has stocks of weapons, spare parts, petroleum, and other assets needed to support high-tempo military operations for a period of weeks to months—more than enough time to achieve the immediate aims of an aggressive campaign in the absence of

determined resistance. In short, wishful thinking is no substitute for in-depth analysis of military needs. And indirect, cost-imposing approaches to deterrence are not substitutes for the ability to defeat directly the aggression one seeks to deter, *provided* the capabilities for an effective direct defense are technically and operationally feasible and affordable.

Concerns About Escalation

Another factor motivating Hammes, Gompert, and Kelly to search for an alternative strategy to deterring China is their perception that the approach DoD is taking to this problem today is fraught with the danger of escalation. These authors characterize DoD's approach as being an extension of the ideas contained in the Air-Sea Battle (ASB) concept, which the U.S. Air Force and Navy have been developing over the past few years.[15] As they portray it, the ASB concept calls on U.S. forces to

> launch physical attacks and cyber attacks against the enemy's 'kill-chain' of sensors and weaponry in order to disrupt its command-and-control systems, wreck its launch platforms (including aircraft, ships, and missile sites), and finally defeat the weapons they actually fire. (Gompert and Kelly, 2013, p. 1)

This imperative for early offensive action against assets on enemy territory, they claim, could create intense pressures on the adversary to conduct preemptive attacks on U.S. strike systems, sensors, and command and control, leading to crisis instability.

While there are reasons to be concerned about crisis instability in the Western Pacific, they have little to do with ASB per se. Obviously, any serious crisis or conflict between nations possessing nuclear forces unavoidably carries risks of escalation to unwanted levels of destruction. The immaturity of the strategic relationship

It would . . . be imprudent for U.S. planners to assume that even concerted efforts by U.S. partners and allies in the region could substitute for U.S. security guarantees backed by a wide range of enhanced power-projection capabilities.

between the United States and the People's Republic of China is also a source of concern. Neither side has clearly spelled out "red lines" in the Western Pacific that, if crossed, could lead to war. Moreover, the channels for rapid, formal communication between Beijing and Washington that could be used in a crisis are unreliable.[16]

ASB is not, by the Pentagon's own definition, a strategy and does not appear to be solely about offensive action against enemy sensors and weapons.[17] Rather, ASB has sought ways to better integrate the air and sea capabilities of U.S. forces. In any case, China's PLA has adopted an offensively oriented strategy of "counterintervention" not in response to ASB but, rather, as a result of its concerns about the ability of U.S. forces, once deployed forward, to gain dominance over the battle space and allow the United States to impose its will on its adversary (see Cliff et al., 2007, pp. xiv–xvi). What could prompt China's leaders to consider early attacks on U.S. forces and bases would be a posture of U.S. forces that presents both the threat of offensive action and vulnerabilities to such attacks. A key tenet of the direct defense strategy, therefore, is the imperative to develop operational concepts for basing and operating forward forces in ways that are more resilient

in the face of the sorts of attacks that an adversary with advanced A2/AD capabilities can mount. Gompert and Kelly also recognize the importance of this, calling for basing and operating U.S. forces in ways that are "more distributed, networked, numerous, diverse, elusive, small, long-range, and hard-to-find" (Gompert and Kelly, 2013, p. 4).

Gaming of future hypothetical conflicts with China suggests strongly that using limited U.S. forces to attack assets well inland is generally not the best approach to defeating China's aggression, especially early in a conflict. This fits nicely with an overall approach to U.S. operations characterized by "observing geographic boundaries . . . , cordoning off certain kinds of targets, and clearly and credibly communicating efforts at limitation" to the adversary, all of which can be done in the context of a vigorous, defensively oriented campaign (see Colby, 2013, p. 7).

It is therefore not accurate to suppose that a strategy that strives to defeat an adversary's aggression outright would necessarily undermine crisis stability or create escalatory pressures. Indeed, in practice, strategies of cost imposition, which respond to aggression by attacking elsewhere, can be interpreted by the adversary as a reflection of the other side's intent to escalate the conflict horizontally and, depending on what is being attacked, vertically. By contrast, a strategy of direct defense, backed by appropriate military capabilities and posture, clearly conveys U.S. will and ability to defend important interests, reducing prospects for miscalculation.

Direct Defense

The most credible deterrent to aggression is one that presents the adversary with the prospect of failure: He perceives that his forces will be unlikely to achieve the operational objectives assigned to

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them because of a combination of the capabilities of the defending forces and the will to employ them. Posturing forces to support such a robust direct defense or denial strategy can be difficult for a nation that is called on to project power over long distances. During the Cold War, for example, there were periods when U.S. and NATO planners lacked confidence in the ability of allied conventional forces to defeat a potential Soviet-led invasion of Central Europe, leading NATO to rely on the threat of nuclear escalation to buttress its conventional deterrent posture. Nevertheless, the United States and its NATO allies strove to develop credible conventional capabilities to thwart Soviet aggression because they deemed it essential to the credibility of their deterrent and because having these capabilities provided the allies with the wherewithal to respond effectively to a wide range of potential challenges, from low-level provocations to a large-scale invasion (see Facer, 1965, pp. 4–5).

While potential adversaries, such as China, Russia, and Iran, do not pose the same type of comprehensive challenge that the Soviet Union did during the Cold War, the requirement for robust forward defenses remains as important today as it was then. Future U.S. forces, properly modernized, postured, and employed in concert with the forces of regional allies and partners, should be capable of posing very significant obstacles to the aggression of potential adversary states. This belief is predicated on years of study of the military strategy and capabilities of China and other potential adversaries; numerous rigorously adjudicated war games; and

combat modeling of near-, mid-, and longer-term conflict scenarios. The remainder of this perspective addresses steps the United States and its security partners can take to support an effective strategy of direct defense against aggression by adversaries with advanced A2/AD capabilities. This is not to imply that doing so will necessarily be easy or inexpensive, but the costs of a credible defense posture are worth the security advantages it provides.

Meeting the Challenge: Developing New Military Concepts and Capabilities

If U.S., allied, and partner forces are to retain credible capabilities to deter and defeat an adversary with advanced military capabilities, new investments in platforms, weapons, infrastructure, and support systems will be called for. But meeting the challenge will require more than simply buying and fielding new and better gear. The scope of the A2/AD challenge that the most capable adversaries pose also calls for new concepts for the conduct of power-projection operations.[18] Money, time, and talent must therefore be allocated not only to the development and procurement of new equipment and infrastructure but also to concept development, gaming and analysis, field experimentation, and exploratory joint force exercises.

The following key capability areas merit priority attention:

- **Enhanced capabilities to strike the enemy's attacking forces early in a conflict.** Adversaries intend to use their A2/AD capabilities to create a window of opportunity during which they can achieve their operational objectives. In response, the United States and its allies must find more ways to attack the adversary's attacking forces and their key supporting assets—his operational centers of gravity—early in a conflict; i.e., prior to gaining air and maritime superiority

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in proximity to adversary territory and forces.[19] This is key. Because U.S. forces have for so long been confident in their ability to dominate these domains in conflicts against less-capable adversaries, they have not, for the most part, invested in capabilities for intelligence, surveillance, and reconnaissance (ISR) and strike in contested environments.

- **Resilient basing.** Forward-deployed forces and bases (including surface ships) need to be more survivable (see below).
- **Rapid suppression and/or destruction of enemy air defenses.** This will include jamming radars, disrupting command and control, destroying missiles on their launchers, and neutralizing large formations of fighter aircraft.
- **Dominant situational awareness.** This will involve fielding more-survivable sensors and control networks while degrading those of the adversary.
- **Cyber defense and offense.** Future U.S. commanders will require more-resilient information networks and improved tools for degrading the networks of adversary forces.

It is beyond the scope of this perspective to identify the specific programs, systems, or technology areas most appropriate for providing these capabilities. However, some broad implications are clear:

- **The United States should continue to modernize its fleets of both long-range and shorter-range military aircraft.** One reaction to the growth of adversary strike capabilities has been to seek ways to conduct more joint operations from bases beyond the range of the most numerous threats (e.g., short- and medium-range ballistic missiles and air-launched cruise missiles). This makes sense to some degree, and bombers; long-range air- and sea-launched cruise missiles; aerial refueling aircraft; and long-range, long-dwell ISR platforms will play important roles in any future U.S. concepts of operation for power projection. But high-performance, shorter-range systems (i.e., fifth-generation fighter aircraft) will also be needed to defend against enemy bomber raids and to maintain freedom of maneuver in contested battle space (e.g., over the Taiwan Strait). The likelihood that U.S. air forces will have to fight outnumbered for some time underscores the need for fighter aircraft and air-to-air weapons that are qualitatively superior to those of the most capable potential adversary states.

- **Larger stocks of advanced weapons and munitions are called for.** A conflict with an advanced A2/AD adversary will consume large quantities of missiles and precision-guided munitions. Early on, weapons that make attacks on key targets from ranges beyond the reach of the adversary's most capable air defense systems possible, such as antiship and land-attack cruise missiles, will be in high demand. And because U.S. forces will be encountering far larger arrays of advanced fighter aircraft and SAMs than in previous conflicts, they will expend large numbers of air-to-air and air-to-surface missiles. Such weapons are costly but are essential to getting the most capability out of a force that is sortie limited. As reflected in the offshore control and defensive A2/AD approaches, U.S. forces should make additional investments in such munitions and should encourage the development of allied capabilities in this area as well (see below).

- **New approaches are required for basing and operating forward forces.** During the Cold War, air base survivability was provided at forward bases primarily by hardening key facilities, such as aircraft hangars, maintenance structures, weapon storage, and crew quarters. NATO also planned to base larger aircraft that were harder to protect beyond the range of the enemy's most numerous attack assets. With the advent of highly accurate ballistic and cruise missiles, broader-based approaches are essential. Efforts should include: (1) hardening selected facilities in theaters threatened by missile and air attacks; (2) ensuring that land-based forces can operate from a large number of austere facilities; (3) investing in more capabilities for rapid repair of damaged facilities, especially runways; (4) confusing enemy targeting of both land bases and surface ships through camouflage, decoys, and deception measures; and (5) providing better protection of key facilities through active defenses against ballistic and cruise missiles. The last of these approaches is particularly challenging, given the high cost, modest effectiveness, and vulnerability of theater ballistic missile defense systems. Efforts are under way to develop lower-cost ways of intercepting ballistic missiles, and these should receive high priority. In the near term, identifying new airfields that U.S. forces might use in wartime, making modest improvements to the infrastructure at these airfields where feasible, developing capabilities and procedures for operations at unimproved airfields, and conducting exercises at such fields

could contribute greatly to reducing the vulnerability of U.S. forces in wartime while strengthening deterrence. This calls for developing relationships with new partners and deepening existing ones. Additional dispersed and expeditionary basing will place new burdens on joint logistics, base security, and engineering assets.

- **U.S. assets based in space will need to be made more robust.** Much of the outcome of the fight for information superiority will turn on the extent to which one side or the other can maintain such critically important capabilities as over-the-horizon communications, surveillance, and positioning, many of which are on satellites. Many adversaries have or are developing weapons that can jam or otherwise interfere with the operations of these satellites. And Russia and China have antisatellite missiles that can destroy satellites, at least in low earth orbit. Countering these threats will call for enhanced space situational awareness systems, which monitor activities in space and characterize and track objects there. These efforts will need to be complemented by a host of measures to make satellite constellations less vulnerable.[20] Policymakers should also consider the potential benefits and costs of developing airborne and terrestrial complements to selected space-based capabilities and fielding offensive space capabilities, as a means of both deterring attacks on U.S. assets and degrading adversaries' command, control, communications, computers, intelligence, surveillance, and reconnaissance.

Of course, as mentioned above, countering the threats potential adversary states pose is not solely a problem for the United States. In fact, it would be unwise and infeasible for the United States to attempt to address these challenges unilaterally. Allies and partners, particularly those directly or indirectly threatened by adversary activities or in the same region, have a strong interest in ensuring that their forces can impose a high price on an aggressor and contribute effectively to combined regional operations that the United States might lead.

With these goals in mind, the proliferation of the systems and technologies that are causing U.S. planners such concerns can be turned to the advantage of the United States. If allies and partners invest wisely, they can impose smaller-scale A2/AD challenges on the states that are wielding them against them. Taiwan, for example, has both the economic means and the technical and operational savvy to develop, deploy, and operate such systems as short-range unmanned aircraft systems, antiship cruise missiles, shallow water mines, rocket artillery, mobile short-range air defenses, and communications jamming gear, all of which, properly employed, could contribute mightily to an effective defense against invasion (see Lostumbo, 2011, pp. 7–10). Similar capabilities could also help such states as the Philippines and Vietnam, which have faced coercive threats from China over control of disputed territories in the South China Sea, to better monitor and protect areas close to their shores.

Gulf Cooperation Council countries concerned about aggression from Iran likewise could invest in hardened air bases, minesweeping craft, missile defenses, unmanned aircraft systems, and other capabilities useful in countering conventional and unconventional threats. And through regular combined force exercises and planning and more-interoperable communications networks, the United States, its allies, and partners can make the whole of their capabilities as great as the sum of their parts. But make no mistake:

Such enhancements as these cannot take the place of U.S. forces and the commitment to use them as the means of offsetting major imbalances in military power.

Conclusion

One hundred years ago, Europe plunged into war while the United States stood aloof, only to decide later that it had to engage. Seventy years ago, following another period of U.S. disengagement, the most destructive and widespread conflict the world has known was at its peak. Since that time, U.S. foreign and security policies have been predicated on the conviction that U.S. interests are best served when the United States plays the leading role in organizing efforts to deter aggression and promote stability in regions of the world where it has important interests at stake. This approach has not always been wisely or consistently applied, and it has not allowed Americans to avoid the scourge of armed conflict entirely. But the strategy of active engagement and leadership, supported by military capabilities second to none, has helped the world avoid large-scale war between major powers and has coincided with an era of unprecedented prosperity for Americans and many of their allies and partners. While this record of success does not argue definitively for the continuation of a strategy of engagement and

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leadership, it does, at a minimum, place the burden of proof on those who would argue for a radical change in approach.

The costs and burdens of leadership are often more tangible than the benefits. This is particularly true when U.S. forces have been engaged in protracted and frustrating combat operations abroad, when challenges arise that call for another exercise of U.S. military power, or when fiscal pressures compel trade-offs in spending between programs to promote domestic well-being and national security. But there are strong reasons to believe that a strategy centered on continued U.S. leadership remains both desirable and feasible. From the standpoint of its military dimension, which is the primary focus of this perspective, there are particular reasons for optimism:

- The United States remains the security partner of choice for many of the world's most important states. This is due as much to the important and enduring shared interests as it is to the prowess of U.S. military forces. Our potential adversaries, for the most part, lack meaningful alliance relationships. And when they act more forcefully to assert their prerogatives, these adversaries strengthen further the bonds between the United States and its allies and partners.

- Modern, large-scale combat operations are complex undertakings, and war is an inherently chaotic enterprise. As much as potential adversary states have studied U.S. combat operations since Desert Storm, they understand that they lag far behind the forces of the United States in both real-world experience with this sort of thing and large-scale, realistic training for it. This gap enhances deterrence and will be hard for others to close.

- Although U.S. defense budgets will likely be tightly constrained for some years to come, they will still, in absolute terms, exceed those of our nearest competitors (China and Russia) by substantial margins for many years to come. And if the administration and Congress can summon the political will to do so, they can find major efficiencies in DoD's budget through such steps as closing unneeded bases; cutting headquarters and other overhead operations; and reducing the rate of growth of the military and civilian compensation, including military health care costs.[21]

- China, Russia, and other potential adversaries are confronting constraints of their own on their future economic growth and national power. A short list of these challenges includes looming demographic imbalances, severe environmental degradation, and the contradictions between authoritarian forms of governance and populations with access to greater material resources and outside sources of information. These realities argue against both making long-term linear extrapolations of Chinese power and the notion that the United States will confront the challenge of a rising and potentially antagonistic China indefinitely.

Just as Mark Twain has been (mis)quoted as saying, "The reports of my death are greatly exaggerated," it would be highly premature (and strategically risky) to decide that the United States, working with its closest allies and partners, is no longer up to the challenge of defending important common interests in regions far from its shores or that the benefits of maintaining credible power-projection capabilities in support of such a strategy are outweighed by the costs. Developing and deploying the capabilities needed for

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direct defense will enhance deterrence and, if deterrence fails, will improve U.S. prospects to protect U.S. and allied interests in conflict. Clarity about our capabilities and intentions will reduce the prospects of miscalculation by the Chinese or others. While many other steps can be taken to reduce the risks of conflict between the United States and potential adversaries (e.g., improved mechanisms for dispute resolution and crisis management), clarity about the U.S. commitment to direct defense and a visible investment in the requisite capabilities are essential. The ideas offered here suggest the main elements of a way forward for U.S. and allied defense planners.

Notes

[1] In contrast, determined and capable nonstate actors, such as the Taliban in Afghanistan, have been able to frustrate important U.S. policy objectives by using insurgency, terrorist, and other irregular approaches.

[2] For a sampling of the contending schools of thought at this juncture, see Montgomery, 2014; Colby, 2013; Hammes, 2012; Layne, 1997.

[3] For a broad assessment of these developments and their potential significance, see Shlapak, 2010. See also Office of the Secretary of Defense (OSD), 2014, and Montgomery, 2014.

[4] Office of the Secretary of Defense (Comptroller)/Chief Financial Officer, 2011, 2012, and 2013.

[5] As CSBA's Todd Harrison has observed, during the buildup associated with the wars in Iraq and Afghanistan, "Rather than getting larger and more expensive, . . . the military has become smaller, older, and more expensive" (Harrison, 2013). See also "Aging Array of American Aircraft Attracting Attention," 2013.

[6] Other adversaries, including Syria, could be focal points for scenarios depicting challenges to U.S. power projection. In particular, U.S. force planners will want to ensure that the force is preparing to confront so-called hybrid adversaries that exhibit characteristics of both selectively modernized military forces and irregular forces and tactics.

[7] The Stockholm International Peace Research Institute (SIPRI) estimates that, in 2013, China spent the equivalent of approximately $188 billion on its armed forces. The figures for the other states are $87 billion for Russia and $11 billion for Iran. Reliable figures for North Korea are not available. See SIPRI, 2014.

[8] For example, DoD estimates that, in 2013, China possessed more than 1,000 short-range ballistic missiles capable of reaching Taiwan (OSD, 2014, pp. 6–9). The PLA is also deploying growing numbers of conventionally armed medium-range ballistic missiles, as well as sea-launched and air-launched land attack cruise missiles.

[9] For an early and seminal assessment of the potential for conventionally armed missiles to threaten operations at forward air bases, see Stillion and Orletsky, 1999.

[10] See, for example, "S-300PMU2 *Favorit* SA-20 GARGOYLE," 2014.

[11] China has flown prototypes of the J-20 advanced fighter, which has been characterized as a "4.5-generation" aircraft. See Sweetman, 2014.

[12] Today, the United States fields 120 fifth-generation F-22 fighters in operational units out of a total force of approximately 2,700 Air Force, Navy, and Marine Corps frontline fighters. See U.S. Government Accountability Office, 2010, p. 4 (figures adjusted to reflect only combat coded aircraft).

[13] Prominent exemplars of this theory are Kennedy, 1987, and Gilpin, 1981.

[14] For example, Taiwan's population is less than 2 percent of mainland China's. Taiwan today spends around $10.5 billion U.S. dollars per year on defense, less than 6 percent of what China is said to spend. Comparable figures for Japan, Vietnam, and the Philippines are, respectively, $49 billion (25 percent), $3.4 billion (less than 2 percent), and $3.4 billion. See SIPRI, 2014, and U.S. Census Bureau, 2013.

[15] For an overview of ASB, see Schwartz and Greenert, 2012.

[16] In 1998, the United States and China set up a hotline for direct communication between their presidents. In spite of this, the White House was not able to contact Chinese leaders following the accidental bombing of the Chinese embassy in Belgrade in 1999 or after the 2001 incident involving a collision between a PLA fighter aircraft and a U.S. surveillance aircraft. See Goldstein, 2013, pp. 2–4.

[17] DoD's Joint Operational Access Concept, which was developed after ASB, states that "Air-Sea Battle is a limited operational concept that focuses on the development of integrated air and naval forces in the context of anti-access/area-denial threats" (DoD, 2012).

[18] The absence of an agreed overall concept of operations severely complicates force planning. Normally, programmed capabilities are assessed against emerging challenges knowing the operational concepts that future forces will employ. Such assessments yield insights about where there may be gaps in capabilities or shortfalls in capacity, leading to further analysis of the ability of a range of investment options to fill the gaps and shortfalls. But when future concepts of operations have not been not settled, the evaluation of alternative investments is necessarily more difficult and uncertain.

[19] The key term here is *operational centers of gravity*. Successful defense will require that U.S. and allied forces be able to quickly damage and destroy the forces that the adversary is using to prosecute aggression. If the allies can do that, it will not be necessary or desirable to threaten to impose additional costs through escalatory attacks, either vertical (i.e., against political or economic centers of gravity) or horizontal (i.e., against military forces far outside the contested area). To minimize prospects for a destabilizing dynamic, the United States should, as it develops new capabilities, concepts, and postures for countering A2/AD threats, make clear through public statements and military exercises that it does not intend such escalation.

[20] One promising approach is to make greater use of commercial satellites (both U.S. and foreign owned and operated). DoD can make direct use of imaging and communications satellites, for example. It can also put its own payloads on satel-

lites launched primarily for other customers. Doing so complicates the adversary's targeting problem. See U.S. Department of Defense and Office of the Director of National Intelligence, 2011, pp. 9–11.

[21] For example, by one estimate, DoD could save upwards of $9 billion over the next five years by implementing modest changes to fees and copayments in DoD's TRICARE health insurance program. See Congressional Budget Office, 2013, pp. 25–27.

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About This Perspective

This perspective is offered as a contribution to the ongoing debate about how the United States should respond to the challenges an increasingly powerful and assertive China poses. It draws on research, analysis, and gaming RAND has done since the mid-2000s, incorporating the efforts of regional specialists, experts in large-scale military operations, strategists, and those skilled in the use of combat simulation models.

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